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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,055	11/19/2003	Sung-Tae Kim	5000-1-491	7211
33942 7590 04/18/2007 CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			EXAMINER LE, THI Q	
			ART UNIT 2613	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			04/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/717,055	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Thi Q. Le	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)):
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. **Claims 1, 3-4, 6-8 and 9-10** are rejected under 35 U.S.C. 102(b) as being anticipated by **Bergmann (US Patent # 6,240,222)**.

Consider **claim 1**, Bergmann clearly shows and discloses, an add/drop module (read as, apparatus 210; figure 5) connected to an optical signal for transmitting a multiplexed optical signal in a wavelength division multiplexing optical transmission system, and adapted to add drop a channel for the optical signal, comprising: a first circulator (read as, circulator 212) having first through third ports (read as, ports 212a-c) that are both connected to an optical fiber, the first circulator outputting an optical signal, input to the first port (read as, port 212b), to the second port (read as, port 212c), and outputting an optical signal, input to the second port (read as, port 212c), to the third port (read as, port 212b) (figure 5); an optical multiplexer/demultiplexer (read as, multiplexer/demultiplexer 214) having a multiplexing port connected to the second port (read as, port 212c) of the first circulator, and adapted to provide a

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passage for the optical signal, and a plurality of demultiplexing ports (read as, ports 201-207) respectively adapted to provide passages for demultiplexed channels of the optical signal; and a plurality of add/drop units (read as, 221 and 227; figure 5, column 7 lines 36-56) each including a second circulator (read as, circulator 270; figure 7A) having first through third ports (read as, port 201 and 270a-b), a second port (read as, port 201) of the second circulator being connected to an associated one of the demultiplexing ports, the second circulator outputting a channel, input to the second port (read as, port 201) , to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port, and an

optical switch (read as, switch 280) having first through fourth ports (read as, ports 280a-d) while being connected at the first port (read as, port 280a; figures 7B-C) to the third port of the second circulator, and at the third port (read as, port 280c) to the first port of the second circulator, the first port of the optical switch being selectively connected either the third port of the optical switch to establish a path for a channel to be passed or the fourth port (read as, port 280b) of the optical switch to establish a path for a channel to be dropped, the second port (read as, port 280d) of the optical switch being selectively connected with the third port of the optical switch to establish a path for a channel to be added (abstract; figures 5 and 7; column 7 lines 36-56; column 7 lines 58-67 and column 9 lines 1-60).

Consider **claim 3**, Bergmann clearly shows and discloses, an add/drop module (read as, apparatus 210; figure 5) for a wavelength division multiplexing optical transmission system, comprising: a first circulator (read as, circulator 212) having a plurality of ports (read as, ports 212a-c), the first circulator being connected to an optical fiber (read as, port 212b is connected to an optical fiber; column 6 lines 20-25); an optical multiplexer/demultiplexer (read as,

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multiplexer/demultiplexer 214) connected to the first circulator; and at least two add/drop units (read as, 221 and 227; figure 5, column 7 lines 36-56) each including a second circulator (read as, circulator 270; figure 7A) having a plurality of ports, at least one port (read as, port 201) being connected to a demultiplexing port of the optical multiplexer/demultiplexer, and an optical switch (read as, switch 280) having a plurality of ports (read as, ports 280a-d; figure 7B-C), two ports being connected to respective ports of the second circulator (read as, ports 280a and 280c are connected to port 270a and 270b; figure 7A), another port (read as, port 208b) of the optical switch being selectively connectable to either establish a path for a channel to be passed or to establish a path for a channel to be dropped (abstract; figures 5 and 7; column 7 lines 36-56; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 4, and as applied to claim 3 above**, Bergmann further discloses, wherein the add/drop unit also include a further port (read as, port 280d; figure 7A) of the optical switch that is selectively connectable to establish a path for a channel to be added (figure 7; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 6, and as applied to claim 3 above**, Bergmann further discloses, wherein the first circulator includes first through third ports (read as, ports 212a-c) that are both connected to the optical fiber (column 6 lines 20-25), the first circulator outputting an optical signal, input to the first port (read as, port 212 b), to the second port (read as, port 212c), and outputting an optical signal, input to the second port, to the third port (read as, port 212a) (figure 5; column 7 lines 36-56).

Consider **claim 6, and as applied to claim 3 above**, Bergmann further discloses, wherein the optical multiplexer/demultiplexer includes a multiplexing port (read as, port 212c) connected

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to the second port of the first circulator, and adapted to provide a passage for the optical signal, and a plurality of demultiplexing ports (read as, port 201-207) respectively adapted to provide passages for demultiplexed channels of the optical signal (figure 5; column 7 lines 36-56).

Consider **claim 8, and as applied to claim 6 above**, Bergmann further discloses, wherein the second circulator includes first through third ports (read as, ports 201 and 270a-b), a second port (read as, port 201) of the second circulator being connected to an associated one of the demultiplexing ports, the second circulator outputting a channel, input to the second port, to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port (figure 7A; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 9**, Bergmann clearly shows and discloses, an add/drop unit (read as, apparatus 221; figure 7A) for an add/drop module for a wavelength division multiplexing optical transmission system, the add/drop unit comprising: a circulator (read as, circulator 270) having a plurality of ports (read as, ports 201 and 270a-b), at least one port (read as, port 201) being connectable to a demultiplexing port of an optical multiplexer/demultiplexer, and an optical switch (read as, optical switch 280) having a plurality of ports (read as, ports 280a-d), two ports (read as, ports 280a and 280c) being connected to respective ports of the circulator, another port (read as, port 280b) of the optical switch being selectively connectable to either establish a path for a channel to be passed or to establish a path for a channel to be dropped (abstract; figure 7A; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 10, and as applied to claim 9 above**, Bergmann further discloses, wherein the add/drop unit also include a further port (read as, port 280d; figure 7A) of the optical

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switch that is selectively connectable to establish a path for a channel to be added (figure 7; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 11, and as applied to claim 10 above**, Bergmann further discloses, wherein the circulator includes first through third ports, a second port (read as, port 201) of the second circulator being connected to the demultiplexing port, the circulator outputting a channel, input to the second port, to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 2 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bergmann (US Patent # 6,240,222)** in view of Caroli (US PGPub 2006/0228114).

Consider **claim 2 and 5, and as applied to claim 1 and 3, respectively, above**, Bergmann disclosed the invention as described above; except for, wherein the optical multiplexer/demultiplexer comprises a waveguide grating router.

In related art, Caroli discloses a wavelength-selective routing node for selectively add, drop or route incoming WDM signal. Further, Caroli discloses the use of a demultiplexer in the form of a waveguide grating router (figure 2; paragraph 0015).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Caroli with Bergmann. Because a waveguide grating router is lower cost compare to other forms of multiplexer/demultiplexer unit. Thus, using a waveguide grating router as the multiplexing/demultiplexing unit can reduce the cost of the add/drop module.

#### ***Response to Arguments***

8. Applicant's arguments filed 1/23/2007 have been fully considered but they are not persuasive.

On page 11, the applicant argues that "Bergmann's transition device 216 does not provide a 'selective connection' between passing, adding or dropping a channel but instead utilizes a



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mirror to perform an add function”. Also, “the transition device does not selectively connect but instead is using a mirror 222, to perform an add function while staying in the bar state (the switch does not change states)”. Further, on page 12, “Bergmann’s transition device fails to anticipate the present invention as recited in the base claims as it fails to show an add/drop unit that is “selectively connected” or “selectively connectable”. The Examiner respectfully disagree, first, because the applicant argues that the transition device 216 (i.e. add/drop unit) is not ‘selectively connected’ or ‘selectively connectable’, but the claimed invention refers to an optical switch that is ‘selectively connected’ or ‘selectively connectable’. Therefore, the claims required that an optical switch that is ‘selectively connected’ or ‘selectively connectable’ not an add/drop unit. Second, it appeared that applicant has misinterpreted the teaching of Bergmann, when stating that the transition device must uses mirrors to perform an add/drop function. On the contrary, the mirror 222 is use for reflecting input signal back to the same path; thus cannot perform an add/drop function. While, a device 221 is use for providing add/drop function or reflection operation. Figures 7a-c shows that configuration the device 221 and the two operating states of the 2x2 switch (i.e. bar state and cross state). Thus, the 2x2 switch has ports that are ‘selectively connectable’, i.e. connections between two ports are adjustable depending on the operation between the bar or cross state (figures 5, 7a-c, column 8 line 57 – column 9 line 61); therefore, it meets the limitation of claims 1, 3 and 9.

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., an add/drop unit that is ‘selectively connected’ or ‘selectively connectable’) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

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specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Thi Le*

  
KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER